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## The Early Acquisition of Verb Constructions in Albanian: Evidence from Children's Verb Use in Experimental Contexts

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Doi:10.5901/ajis.2017.v6n1p87

### Abstract

*One of the wonders of human development is children's symbolic capacity to generate language that goes beyond the input received. The present study examines this developmental process with special focus on language typological factors. More specifically, it examines 2- and 3-year-old Albanian-speaking children's ability to acquire transitive and intransitive constructions in an experimental context. Thirty 2- and 3-year old Albanian-speaking children divided into two age cohorts were trained and then tested using an elicited production task based on the novel verb paradigm. Findings reveal that Albanian-speaking children are precocious in their productivity with transitive and intransitive verb constructions. In contrast to much prior research on English-speaking children, results revealed that most Albanian-speaking children were able to productively use familiar and novel verbs in both transitive and intransitive constructions, regardless of age and whether they heard the novel verbs modeled in verb constructions tested. It is argued that languages with explicit markings for agent-patient relations facilitate an earlier onset of productivity than word-order languages like English. Additionally, results suggest that children's capacity to diversely use familiar verbs affects the developmental process of acquiring new verbs including those used in novel verb experiments. Discussion focuses on the importance of using naturalistic experimental designs to construct a more comprehensive view of the process by which children acquire verb constructions and also considers the implications of the cross-linguistic findings for developmental theories of language acquisition.*

**Keywords:** language acquisition, psycholinguistics, Albanian language, developmental psychology

### 1. Introduction

In the early years of life children learn to use particular linguistic items and phrases in the way that adults use them, yet they go beyond this use in creative ways. This creativity or productivity is based on children's ability to discern patterns in the acts of linguistic communication they experience around them, and thus construct abstract linguistic categories and constructions that underlie mature language use (Tomasello, 2006; 2014). A question receiving much attention in the psycholinguistic literature is how children make the transition from an early, restricted usage of verb constructions to a more abstract usage involving abstract structural categories. The acquisition of verb constructions is of particular interest due to the major role verbs play in numerous aspects of language structure, in linguistic form-function relations, and in processes of language acquisition and language development. The acquisition of verbs as lexical items, typically emerging during the second year of life, marks a crucial point in children's transition to adult-like grammatical competence. More concretely, the question at hand is how children move from the use of fairly concrete item based schemas (e.g. *kisser* - *KISS* - *kissee*) to possessing abstract grammatical constructions (e.g. *agent* - *verb* - *patient*).

A number of experimental studies conducted by Tomasello and colleagues (see Tomasello, 2014 for a review) provide support for the claim that English-speaking children are not able to move beyond the use of lexically specific verb constructions before the age of 3;0. In these experiments investigators taught children new verbs in one construction frame and investigated whether they could use them productively in another. If they could, then this would imply the presence of syntactic categories. If, on the other hand, the children used the new verbs conservatively, that is, only in the ways they had heard them, then this would imply the lack of a more abstract syntactic system, and that children were learning the verbs individually. The experiments involved presenting children with new verbs in different constructions

(e.g. intransitive, passive, and non - SVO word order) and then studying whether they produced them in correct transitive constructions. Results from several studies (Abbot-Smith, Lieven & Tomasello, 2001, 2008; Akhtar, 1999; Dittmar, Abbot-Smith, Lieven, & Tomasello, 2008a; 2008b; Tomasello & Brooks, 1998, see also Ambridge & Lieven, 2011) showed that 2-year-old children almost never produced an utterance using a novel verb in anything other than the construction in which the verb had been modeled. The 2;6 year-old children were somewhat productive, but still a majority of them avoided using the novel verbs in constructions that were not modeled.

These findings and others have led Tomasello and colleagues to argue that children under 3 years of age do not possess abstract schemas that would enable them to be generative with their grammar. English-speaking children are unable to transfer their knowledge of word order from their existing item-based constructions to the novel items until after the age of 3;0. Young children's early syntactic marking (for example, word order in English language) is learned for different verbs on a one-by-one basis (see Tomasello, 2006). Children gradually abstract grammatical structure from a variety of concrete representations of linguistic items drawing heavily on dominant input patterns and only around the age of 3;0 are they able to rely on more abstract knowledge of verb constructions. This limited productivity is presumably due to the difficulty of categorizing or schematizing entire utterances, including reference to both the event and the participant roles involved, into more abstract constructions; especially given the many different kinds of utterances children hear and must sort through (Tomasello, 2006; 2014).

The majority of these studies, so far, have focused on English-speaking children's productivity with transitive and intransitive constructions (see Tomasello, 2000; 2006 for a review). Less of an emphasis has been placed on how children acquire these more abstract syntactic categories. Other crosslinguistic work (Berman, 1993; Budwig et al., 2006; Cenko & Budwig, 2007; Srivastava, 2009; Uziel-Karl & Budwig, 2003) on the acquisition of verb constructions suggests that languages that are rich in syntactic and morphological cues for the transitive/intransitive distinction may facilitate children's creation of form-function pairings that indicate such a distinction at an earlier age than that of English speaking children. This rapid development may be due to the fact that in addition to cues related to input, children may also make use of morphosyntactic information in learning the meaning of verbs. For example, naturalistic observations of Hindi- (Budwig et al., 2006), Albanian- (Cenko & Budwig, 2007) and Hebrew-speaking (Uziel-Karl & Budwig, 2003) 2-year-old children indicate that these children are able to use a given verb flexibly across transitive and intransitive constructions with the appropriate morphological markers. Moreover, these children create systematic meaning clusters around these different construction types, using overt morphological markings on certain verbs as a distinguishing feature. For instance, it was noted that these children reserved the use of non-agent subjects to talk about negative happenings (e.g., fell, broke, got stuck) and scenes involving resistance from the environment. It is interesting to note that children used unaccusative constructions to downplay self's agency in causing a negative event to happen, thus creating an interim solution to meet their communicative needs (Budwig et al., 2006; Cenko & Budwig, 2007; Uziel-Karl & Budwig, 2003).

Research examining Hindi-speaking 2;6 and 3-year-old children (Srivastava, 2009) has yielded more conclusive evidence on these children's precocious usage of transitive and intransitive constructions. Srivastava (2009) presented children with novel verbs in transitive or intransitive constructions and then elicited the use of these verbs in un-modeled constructions. For example, Srivastava modeled the novel verb *gav* in the transitive construction (e.g., "The boy is giving the water") and then elicited the use of the verb in the un-modeled intransitive construction (e.g. "The water is giving"). Srivastava (2009) found no difference in Hindi-speaking children's ability to use novel verbs in un-modeled constructions based on age or the type of modeled construction. Furthermore, 94% of the 2;6-year-olds and 87.5% of the 3-year-olds in this study were able to use novel verbs in the un-modeled constructions. Thus, Hindi-speaking children in this sample seem to demonstrate a higher productivity than English-speaking children who demonstrate a 40% rate of productivity (Brooks and Tomasello, 1999), Hebrew-speaking children with a 46% rate of productivity (Berman, 1993) and German-speaking children with a 20%-40% rate of productivity (Wittek and Tomasello, 2005).

There are several reasons why Hindi-speaking children may be more productive with sentence-level construction use than English-speaking children. Hindi is a highly inflected language with flexible word order and high argument ellipsis. Hindi also presents an important contrast to English because in Hindi, many individual verbs are overtly marked as being causative (transitive) and inchoative (intransitive) (Budwig et al., 2006; Narasimhan, Budwig, & Murty, 2005). For example, an English-acquiring child has to learn the verb *roll* which can then be used in the same form in the intransitive ("The ball rolled") and the transitive ("The boy rolled the ball"). The case is quite different for a Hindi-acquiring child. For her, the Hindi verb *luD/hak*, which means "roll", is structurally different for the two syntactic constructions. It has to be affixed with a causative marker -aa to make it transitive (*luD/aa-yaa*). This causative marker on the verb can act as a salient local cue for marking agent-patient relations in Hindi; especially because it is post-posed, syllabic and stressed, obligatory, predictable and consistent in adult language (see Slobin, 1982 for a more detailed discussion of qualities of

salient local cues). Furthermore, the high argument ellipsis and flexible word order may further draw children's attention to the verb marker as the only regular cue (see Srivastava, 2009 for a more thorough discussion).

Another important reason that may explain the higher level of productivity of Hindi-speaking children in the Srivastava (2009) sample is the experimental methodology used in this study. Unlike other studies on verb usage productivity that are involved in a laboratory setting where children passively watch an experimenter act out scenes, the present study was conducted in children's homes. Furthermore, children were given the opportunity to act out the actions themselves as well as to watch the researcher model them. Children were then presented with laptop animations depicting the actions in order to provide more naturalistic discourse pressure for the children to elicit the novel verbs in constructions in which they had not heard the verbs used before. As such, in this study, certain aspects of the design of prior studies were altered in order to better fit what we know about toddlers' naturalistic language use, thus, possibly leading to more conclusive results.

In light of the results reported on crosslinguistic studies on the acquisition of verb constructions, it is clear that there is a need for further examination of languages that like Hindi include salient local cues that mark the transitive/intransitive distinction. Furthermore, there is a need for studies that combine experimental methods guided by children's naturalistic language use with naturalistic observations of children's verb usage. To date very few studies of this sort have been conducted for both English-speaking children (see Smith, 2006, and Srivastava, 2009 for an exception) and children acquiring languages other than English (see Srivastava, 2009 for an exception). The main aim of the current study is to investigate the degree to which children learning a morphologically rich language are productive with novel verbs in marking agent-patient relations. The focus is on Albanian, a morphologically rich language, and the methodology replicates the design of Srivastava (2009) used with Hindi-speaking children.

Albanian is a particularly interesting language to study with regard to transitive and intransitive constructions, because it provides important structural contrasts to English in marking agent-patient relations. In Albanian, the verb is affixed with the marker *-he-* to make it fit an unaccusative syntax. Let's consider some examples to illustrate this phenomenon. In English, the verb *break* is a bitransitive verb that can be used in both transitive (e.g. "*The girl breaks the vase*") and unaccusative intransitive (e.g. "*The vase breaks*") constructions. Notice that the verb *break* has the same form in both constructions. In Albanian, the verb *prish* (*break*) is also a bitransitive verb that can be used both in transitive (e.g. "*Vajza thyen vazon*" – "*The girl breaks the vase*") and unaccusative (e.g. "*Vazoja thy-he-t*" – "*The vase breaks*") constructions. In Albanian, however, the verb is structurally different for the two syntactic constructions, since the marker *-he-* is added to the verb in the unaccusative construction.

To reiterate, in Albanian the verbs in transitive and unergative constructions have the same form and are morphologically distinguished from verbs in the unaccusative construction (see Kallulli, 2007). It is proposed that Albanian-speaking children use the morphological marker on the verb as a 'local cue' to indicate agent-patient relations. In other words, these children may notice that the marker *-he-* on the verb is consistently and reliably used to indicate only patient + verb relations, whereas the absence of this marker indicates agent + verb + patient or actor + patient relations. This 'local cue' may help children in building more abstract categories of 'transitives', 'unergatives' and 'unaccusatives'.

In addition, Albanian differs from English in that the former is characterized by flexible word order and argument ellipsis. Let's consider the transitive construction for example. In English the canonical word order of this construction is Subject-Verb-Object (e.g. "*The boy breaks the vase*"), and the sentence structure requires both the subject and the object to be considered grammatically correct (e.g. "*breaks vase*" is not grammatically correct since there is no subject). In Albanian, the canonical word order is also Subject-Verb-Object for the transitive construction. However, the word order is flexible; thus, a sentence with the Verb-Object-Subject word order (e.g. "*Thyen vazon djali*" – "*Breaks the vase the boy*") is also grammatically correct. Moreover, in Albanian, arguments can be dropped since information about case, number and person are encoded in the verb. A sentence containing a single verb is considered grammatically correct in Albanian if the verb is appropriately marked with this information (e.g. "*e thyen*" – "*(he) breaks (it)*"). Word order flexibility and argument ellipsis create ambiguity in input with regard to verb transitivity and as such raise interesting questions with regard to how Albanian children use surrounding input and whether their use is similar to that of the English speaking children. It is possible that flexible word order and argument ellipsis enhance the salience of the morphological marker on the verb (the *-he-* marker) as the only reliable cue for assessing transitivity. Children cannot reliably rely on word order or arguments to draw information about verb transitivity; thus, they may use the morphological marker as a 'local cue' to mark agent-patient relations. Naturalistic research on Albanian children's acquisition of transitive and intransitive constructions, indeed, provides evidence that children are able to alternate between transitive and intransitive constructions and to create systematic meaning clusters around them from the early age of two (Cenko & Budwig, 2007). Thus, Albanian

provides children with a different set of options from those that are available to the English-speaking child and the study of these options can further our understanding of the process of learning verb usage early in life.

### 1.1 The Present Study

The main goal of the current experimental study is to investigate Albanian-speaking 2- and 3-year-olds' productivity with verb constructions by examining their ability to use markings on the verbs to alternate between transitive and intransitive constructions. Albanian-speaking 2- and 3-year olds were presented with familiar and novel verbs, i.e. made up verbs that do not exist in Albanian language, in either transitive or intransitive constructions. Then, we attempted to elicit the alternate construction in which the children could use the verbs, in order to assess their productivity with transitive and intransitive constructions.

The current study adopts the methodology used by Srivastava (2009), which modifies the design used in most experimental studies in order to better recapture what children are capable of doing in a more naturalistic setting, and thus yielding richer data (see also Smith 2006, for a similar approach). In this methodology, children are active participants and take turns with the investigator and a puppet to perform the actions depicting the novel verbs. Natural data have shown that during play, caregivers have the tendency to highlight their children's agency and to downplay their own (Budwig, 1996; 2000). In many novel verb studies reviewed earlier (e.g. Tomasello & Brooks, 1998; Wittek & Tomasello, 2005) children do not assume an agentive role, but merely observe an experimenter performing actions with puppets. In the current study, the child's agency was highlighted through the actions of the child and also by the experimenter, thus, creating a context closer to naturalistic play. This design allows children to use language in the experimental setting in the same way they would in everyday life, i.e. to fulfill communicative functions, and not merely repeat the input they hear.

The main goal of the study was to investigate Albanian children's productivity with verbs in transitive and intransitive constructions, and the factors that may affect this process. The specific questions posed by the study regarding Albanian-speaking children's productivity with verb constructions are as follows:

1. Are Albanian-speaking children able to alternate between transitive and intransitive constructions at an earlier age than what has been reported for English-speaking children?
2. Are Albanian-speaking children more productive with familiar rather than novel verbs?
3. Does the directness of the event (agent carries out a change of state in the patient by means of direct physical contact vs. with the help of an instrument) and the type of construction children are trained on (transitive or intransitive) influence their productivity?

It is hypothesized that Albanian-speaking children as young as 2-years-old will be able to produce alternate constructions with the appropriate morphological markings. In other words, it is expected that Albanian-speaking children will demonstrate an earlier productivity with transitive and intransitive constructions than what has been reported for English-speaking children. If familiarity with verbs, directness of the event and type of event do not influence Albanian children's productivity, then we can affirm the fact that these children have abstract representations of transitive and intransitive constructions.

## 2. Methods

### 2.1 Participants

Thirty Albanian-speaking children participated in the study. Fifteen children were 2-year-olds (7 females and 8 males; mean age 2;5, range 2;2-2;8) and the other fifteen were 3-year-olds (8 females and 7 males; mean age 3;1, range 2;11-3;4). The modal education level of the mothers was a university degree, ranging from a high school degree to a masters' degree. The average number of siblings was 0.36 with a range of 0-2. Children spent an average of 25 hours in daycare ranging 0-42 hours. All children came from a middle class background and were recruited through personal contact and daycare centers located in Tirana, Albania. One additional child was excluded from the study due to a speech impediment diagnosed after the child participated in the study.

### 2.2 Materials and Design

The goal of this study was to investigate whether children can alternate between transitive and intransitive constructions

using the correct morphology with both familiar and novel verbs. The study consisted of two tasks adapted from a previous study with Hindi-speaking toddlers (Srivastava, 2009). The first task tested four familiar verbs used in Albanian adult language. These verbs were hap - to open, tund - to shake, thyej -to break, and rrëzoi - to cause something to fall. and the second task utilized four novel verbs that are made-up verbs, nonexistent in Albanian language. All familiar and novel verbs could be employed in both transitive and intransitive constructions.

The novel verbs were adapted from those used in a previous study with Hindi-speaking children (see Srivastava, 2009), but the forms of the verbs were made to suit the phonetic patterns of Albanian language. The four novel verbs were constructed to be consistent with the first and third verb classes in Albanian. For these verb classes, the present tense form of the verb is formed by adding morphological marker -he- and the appropriate conjugational endings to the verb stem to make the verb fit unaccusative syntax. The preterite form of these verbs is formed with the particle u before the preterite form of the verb.

The four novel verbs represented distinct actions. When modeled in the transitive construction, the four novel verbs were: (1) daksoj - presented a person using a "magic wand" to make dots that appear suddenly on a piece of paper; (2) pingoj- represented an agent causing a paper to crumple by exerting pressure on it; (3) gavoj- depicted a person pouring a colored powder in a container containing liquid causing the liquid to bubble and change color; and (4) maloj - depicted an agent moving a yo-yo so that the attached ball went up-and down. When modeled in the intransitive construction, the form of the novel verbs were added the appropriate morphology for use in intransitive constructions (e.g. daksohem instead of daksoj) and was used to describe the change of state of the object (e.g the crumpling of the paper). Two of the verbs (pingoj and maloj) depicted direct transitive events, which are events in which the agent causes a change in an object through direct physical contact. The other two verbs (daksoj and gavoj) represented indirect transitive events, which are events in which the agent causes a change in the object indirectly, for example through the use of an instrument.

Each familiar and novel verb was presented to the child via a pair of animated pictures on a laptop screen. The pair of pictures depicted the action of the verb represented from two points of view to the child: A person or object undergoing an action, to elicit intransitive descriptions; and somebody else performing the same action to that person or object, to elicit transitive descriptions.

The child saw the animations one after the other. The experimenter described the first animation using the appropriate construction (transitive or intransitive) to depict the action, and then asked questions to elicit child's use of the verb in the construction appropriate to the second animation. Each child heard half of the verbs in the transitive construction (e.g., "Djali po dakson letrën" – "The boy is daxing the paper") and the other half in the intransitive construction (e.g. "Topi po malohet" – "The ball is maling"). The order of presentation of verbs as well as construction type (transitive or intransitive) presented first were counterbalanced.

### 2.3 Procedure

The elicited production task (adapted from Srivastava, 2009) consisted of two sessions conducted within the span of one week (average time that elapsed between sessions was 3 days). All children were tested in individual rooms in their homes or daycare centers. Each session lasted approximately 30 minutes and was audio- and video- recorded. The first session consisted of an exposure and elicitation phase for familiar verbs as well as an exposure phase for novel verbs. The child was tested on her ability to use four familiar verbs in the transitive and intransitive constructions, and was introduced to activities depicting the actions of the novel verbs. The second session consisted of an exposure phase and an elicitation phase for novel verbs. The child was presented with the actions of the novel verbs in the same manner as in the first session, and then the experimenter presented the child with a pair of animations on a laptop screen as described above, in order to elicit use of the novel verb in the construction appropriate to the presented animation. The child was exposed to novel verbs in two sessions, in line with research which found that distributed modeling was more effective for learning than massed modeling (Ambridge, Theakston, Lieven & Tomasello, 2006; Childers & Tomasello, 2002).

## 3. Results

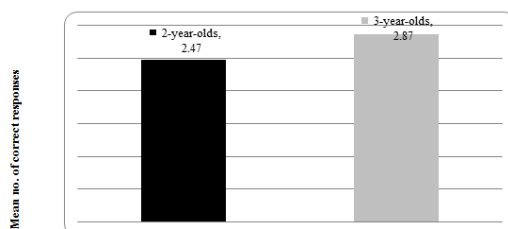
The results present analyses that address the main questions guiding the present study on children's use of novel verbs during the experimental task. The first set of analyses examines issues of productivity, and more specifically, children's ability to produce familiar and novel verbs in un-modeled constructions. The second set of analyses focuses on whether children are more productive during familiar rather than novel verb conditions or vice versa, i.e., whether it is easier for

these children to use familiar rather than novel verbs in the un-modeled constructions, or vice versa. Prior research (Srivastava, 2009) suggests that children are more able to produce a verb of converse transitivity with the appropriate morphology when this verb is familiar to them rather than when it is novel. The third set of analyses addresses issues of directionality, focusing on children's performance and type of construction they were trained in and the relation between children's performance and the event type depicted by the verb. All sets of analyses also address the issue of potential age differences related to children's performance.

### 3.1 Productivity

The first set of analyses deals with the children's ability to produce correct responses during the familiar and the novel verb tasks. Children's responses were coded as correct when they used the target verb in the alternate construction it was introduced in, using the appropriate morphology. A repeated measures ANOVA was conducted for both familiar and novel verbs to determine whether children produced more correct responses rather than incorrect ones in both conditions. Age (2- and 3- year- olds) was the between-subjects variable. The interaction between age and difference in response scores was not significant for either condition. A significant difference was found between correct and incorrect response scores for familiar verbs,  $F(1, 28) = 63.754$ ,  $p < .01$ . The average number of correct responses in the familiar verb condition was 3.3 out of a possible total of 4 correct answers. In the novel verb condition, the difference between correct response scores and incorrect response scores was also statistically significant,  $F(1, 28) = 28$ ,  $p < .05$ ; with an average number of 2.7 correct responses out of a possible total of 4 correct responses.

There was no main effect for age. Both 2- and 3-year-old children were similarly able to use the novel target verbs in the alternate construction it was modeled in, using the appropriate morphology (see Figure 1).



**Figure 1.** Mean number of productive answers on novel verb task by age

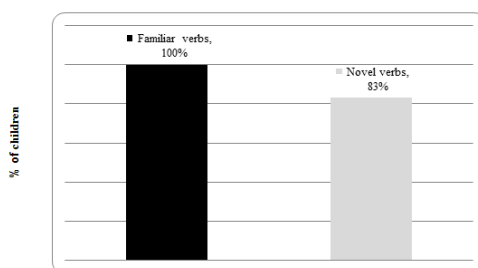
This analysis reveals that children from both age groups were able to use productively both familiar and novel verbs. Thus, during the elicitation tasks, children could use familiar and novel verbs in the alternate constructions they heard them during training, and could use them with appropriate morphology required to produce a verb of converse transitivity in Albanian.

### 3.2 Children's Performance in the Familiar and Novel Verb Task

To compare children's performance in familiar and novel verb tasks, a mixed model ANOVA was conducted, where familiarity with verbs (familiar or novel) was the within-subjects variable and age (2- and 3- year-olds) was the between-subjects variable. The interaction between age and familiarity was not significant, indicating that children's ability to produce both familiar and novel verbs in un-modeled constructions was not affected by age.

The difference between productive scores in the familiar verb task and productive scores in the novel verb task is significant,  $F(1, 28) = 4.67$ ,  $p < 0.05$ . All children were able to provide at least one productive response in the familiar verb condition, while, in the novel verb condition, five children out of a total of 30 children were not able to provide any productive responses. However, as shown in Figure 2, most children were able to produce verb constructions they had not heard modeled during training regardless of their familiarity with the verbs.





**Figure 2.** Percentage of children providing at least one productive answer during the familiar and the novel verb tasks

### 3.3 Effects of Training Construction and Event Type

Another question in the current study is whether the type of construction that children heard during training affects their ability to give productive responses. Or put differently: Are children better at producing transitive constructions when trained in the intransitive construction, or vice-versa? To examine this issue, a repeated measures ANOVA was conducted for both familiar and novel verb conditions, with construction type (transitive or intransitive) as the within-subject variable, and age (2- and 3- year-olds) as the between-subject variable. The interaction between age and construction type was not significant for both familiar and novel verb conditions. Furthermore, there was no main effect for construction type for either the familiar verb or the novel verb condition. Children's performance when trained with transitive construction and asked to elicit an intransitive construction was not significantly different from their performance when trained with the intransitive construction and asked to produce a transitive construction in neither the familiar nor the novel verb condition (see Table 1). Overall, children could change both familiar and novel verbs from the transitive to the intransitive construction, and vice versa, without much difficulty.

**Table 1.** Mean number of productive answers (out of 2) (and standard deviations), as a function of training construction and age group

| Age group (years) | Training construction |              |
|-------------------|-----------------------|--------------|
|                   | Transitive            | Intransitive |
| 2.0               | 1.20 (.94)            | 1.27 (.88)   |
| 3.0               | 1.53 (.74)            | 1.47 (.83)   |

Another related question has to do with the effects of event type on children's performance with novel verbs. That is, is children's ability to provide productive responses influenced by degree of directness of novel verbs, given that two novel verbs were depicted as direct events and the other two as indirect events? To answer this question, a 2x2x2 randomized-repeated ANOVA was performed, with event type (direct and indirect) and construction type (transitive and intransitive) as within-subject variables and age (2- and 3- year-olds) as the between-subject variable. The three-way interaction between event type, construction type and age was not significant, and neither was the two-way interaction between event type and construction type. Furthermore, there was no significant difference in productive scores as a function of event type, indicating that children's performance on a direct transitive event (e.g. girl crumpling the paper) was not different from their performance on indirect intransitive events (e.g. water changing color on its own). So, children's productivity was not limited by the construction type and the event type they were trained in.

## 4. Discussion

The current results indicate that Albanian-speaking 2- and 3- year-olds are able to productively use morphological markings on the verb to indicate agent-patient relations. In contrast to what has been reported for English-speaking 2-year-olds, most Albanian-speaking 2-year-olds (80%) are able to use at least one novel verb in both the transitive and the unaccusative intransitive construction with the correct morphology that marks transitivity on the verb. Age is not a predictor of lack of flexible verb use, since there are no age differences in the ability to be productive with novel verbs--both 2- and 3- year-old Albanian-speaking children were able to alternate between constructions without much difficulty.

Moreover, most children were able to produce verb constructions they had not heard modeled during training regardless of their familiarity with the verbs, and their productivity was not limited by the event type and the construction type they were trained in.

Studies with English-speaking children indicate that they have trouble being productive with novel verbs before their third birthdays (see Tomasello, 2000; 2006 for reviews). The findings from this study, however, reveal the same pattern of results reported by Srivastava (2009) with Hindi-speaking children. Albanian and Hindi are both morphologically rich languages and children acquiring them seem to be moving beyond an item-based usage of verbs at any early age-earlier than what had been reported for English-speaking children.

Usage based theorists have long argued that the typology of the language children hear affects children's acquisition of different language subsystems (Budwig, 2001; Slobin, 1982; Tomasello, 2006, see also Rowland, 2014 and Ninio, 2011). Morphologically rich languages that mark agent-patient relations via nominal and verbal markings-morphemes added to nouns and verbs-provide "local cues" to the children-hence, the 'local cue hypothesis' (Slobin, 1982). The basic idea is that bound morphology- case markers on nouns or morphological markings on verbs are easier to learn and use as an indicator of agent-patient relations than distributed cues such as word order. Albanian (like Hindi) is a language where the verb is marked with the morpheme *-he-* in order to fit the unaccusative syntax. English, on the other hand, relies solely on word order to establish agent-patient relations. Hence, children acquiring languages that clearly mark agent-patient relations, such as Albanian, Hindi, and Turkish (to name a few) understand and master the expression of such relations at an earlier age than English-speaking children (see Slobin, 1982; Srivastava, 2009). One claim is that "local cues" such as bound morphology can be processed on the spot without taking the entire sentence into account, whereas "distributed cues" such as word order impose a greater burden on short-term processing capacity (because sentential fragments need to be held in memory until the next relevant component is processed) (Abbot-Smith et al., 2008).

The findings of precocious productivity of Albanian-speaking children in the present study can also be interpreted in light of Slobin's "local cue hypothesis." Albanian is a language where the morphological marker on the verb may act as a salient cue for the child to use as indicators of agent-patient relations. In Albanian, the verb is affixed with the marker *-he-* to make it fit the unaccusative intransitive syntax: *"Topi rrotullo-he-t"* – "The ball rolls." This morphological marker is postposed and syllabic, thus, perceptually salient to the child. It is obligatory and affixed to the verb and thus more local. There is perfect one-to-one mapping of form to function (*-he-* = something is happening to a patient) and this morpheme is used to express only grammatical functions. Also, in Albanian, morphemes are expressed through regular and consistent paradigms, and are always present in adult language, facilitating children's productivity. Given the high rate of argument ellipsis in adult Albanian, morphological markers on the verb may be more salient cues than case markings on the nouns and other surrounding arguments.

The consistent patterns of grammatical morphology in constructions in Albanian which typically designate abstract relations of one sort or another-might facilitate or even enable recognition of an utterance as instantiating a particular abstract construction and make analogizing easier (see Tomasello, 2006). Gentner and colleagues propose that, during the analogy making process, learners align whole utterances or constructions, or significant parts thereof, and attempt to align all the elements and relations in one comparison. The object elements that children experience in the slots of a structure can facilitate analogical processes. The consistency of items in the slots, i.e. a given item occurring in one slot and not in others, can make analogizing easier. Children find it easier to do structural alignments when more of the elements and relations are not just similar functionally but also similar, or even identical, perceptually (Gentner & Medina, 1998). Thus, Albanian children can utilize the *-he-* marker as an element that is always perceptually identical in verbs in the unaccusative intransitive construction. This persistent factor may facilitate the analogizing process for Albanian-speaking children.

Another potential influence on the high rates of productivity reported in this study is the methodology used. Budwig et al. (2006) argued that in order to better access children's constructional abilities, a naturalistically informed novel verb training procedure may prove especially useful. This procedure is created keeping children's interim solutions in mind, and using material from naturalistic cross-sectional and longitudinal studies as the backdrop for the creation of novel verb experimental studies. The idea is to create experimental designs that are 'child-friendly' and to not necessarily presuppose adult-like meaning systems.

Additionally, the experimental procedure aimed at mimicking as close as possible a naturalistic setting; the visits were conducted in the children's homes or daycare centers; children participated in the games, rather than passively watching the experimenter; and a 'naïve' puppet asked the elicitation questions, in order to avoid any possible confounding factors that could impede tapping into children's constructional abilities.



Findings on Albanian-speaking children's early acquisition of agent-patient relations and verb constructions suggest that children's learning of the syntactic marking of agent-patient relations is strongly influenced by the nature of language they hear around them. However, the central question that remains is whether these expressions of agent-patient relations are more abstract and presuppose adult-like linguistic competence. In order to answer this question, this study examined how familiarity with verbs and the different types of events and constructions children were exposed to affected children's productivity rates. If Albanian-speaking children's productivity with novel verbs would not have been affected by these factors, then we could affirm the fact that these children have more abstract representations of transitive and intransitive constructions. However, this was not fully the case. There was a significant difference between children's performance with familiar and novel verbs-more children performed better with familiar rather than novel verbs. This fact demonstrates that even though Albanian-speaking children have higher rates of productivity than English-speaking children, their usage of verbs in transitive and intransitive constructions is not yet adult-like.

Albanian-speaking children's productivity with novel verbs, however, was not influenced by the event type (direct or indirect) or the directionality of change of constructions (transitive to intransitive or vice-versa). Albanian-speaking children had no difficulty changing transitive to intransitive constructions and vice versa. This finding suggests that the transitive and the intransitive construction are equally well-established in Albanian-speaking children. Studies that look at the frequency of these constructions in the input may help to understand whether the patterns found in this study reflect dominant patterns found in adult language. Furthermore, Albanian-speaking children's performance was not influenced by the event type, again suggesting that these children have moved beyond an item-based use of constructions. Even though Albanian-speaking children's linguistic competence is not abstract, they are at an intermediate phase of development that seems to be beyond the item-based construction phase. Developmental-functionalists (Budwig, 1995; Budwig, et al, 2006) have argued that children gradually move from a verb-specific phase to a more abstract use of constructions, and as children undergo this process they actively organize what they take from input into something that is more systematic and productive than a mere inventory of rote-learned sentences. According to this approach, Albanian-speaking 2- year-old children may neither be working verb-by-verb nor at an abstract rule level, but rather at some intermediate level, since their productivity is influenced by their familiarity with verbs.

Findings of the present study indicate that language typology strongly influences children's acquisition of agent-patient relations, and reaffirm the importance of cross-linguistic studies to this extent. Morphologically rich languages offer different sets of options to the language-acquiring child rather than English, and the examination of these sets of options can lead to a better understanding of the verb construction acquisition process.

## References

- Abbott-Smith, K., Lieven, E., & Tomasello, M. (2001). What preschool children do and do not do with ungrammatical word orders. *Cognitive Development*, 16, 679-692.
- Abbot-Smith, K., Lieven, E. & Tomasello, M. (2008). Graded representations in the acquisition of English and German transitive constructions. *Cognitive Development*, 23(1), 48-66.
- Akhtar, N. (1999). Acquiring basic word order: Evidence for data-driven learning of syntactic structure. *Journal of Child Language*, 26(2), 339-356.
- Ambridge, B. & Lieven, E. V. M. (2011). *Child language acquisition: Contrasting theoretical approaches*. Cambridge: Cambridge University Press.
- Ambridge, B., Theakston, A., Lieven, E., & Tomasello, M. (2006). The distributed learning effect for children's acquisition of an abstract grammatical construction. *Cognitive Development*, 21, 174-193.
- Berman, R. A. (1993). Marking of transitivity by Hebrew-speaking children. *Journal of Child Language*, 20, 641-669.
- Brooks, P., & Tomasello, M. (1999). Young children learn to produce passives with nonce verbs. *Developmental Psychology*, 35(1), 29-44.
- Budwig, N. (1995). A developmental-functionalist approach to child language. Mahwah, NJ: Lawrence Erlbaum.
- Budwig, N. (2001). Perspective, deixis, and voice: Developmental reflections. In A. Cienki, B. Luka, and M. Smith (Eds.). *Conceptual and discourse factors in linguistic structure* (pp. 63-76). Stanford, CA: CSLI Publications.
- Budwig, N., Narasimhan, B., & Srivastava, S. (2006). Interim solutions: A construction approach to the development of transitive and intransitive constructions in Hindi. In E. Clark and B. Kelly (Eds.), *Constructions in acquisition*. Stanford, CA: CSLI Publications.
- Cenko, E., & Budwig, N. (2007). The acquisition of early verb constructions in Albanian: A first look at transitives and intransitives. In H. Caunt-Nulton, S. Kulatilake, & I. Woo (Eds.), *A supplement to the proceedings of the 31st Boston University Conference on Language*. (Retrievable from: <http://www.bu.edu/linguistics/APPLIED/BUCLD/supp31.html>)
- Childers, J., & Tomasello, M. (2002). Two-year-olds learn novel nouns, verbs, and conventional actions from massed or distributed exposures. *Developmental Psychology*, 38(6), 967-978.
- Dittmar, M., Abbot-Smith, K., Lieven, E., & Tomasello, M. (2008a). German children's comprehension of word order and case marking in

- causative sentences. *Child Development*, 79, 1152-1167.
- Dittmar, M., Abbot-Smith, K., Lieven, E., & Tomasello, M. (2008b). Young German children's early syntactic competence: a preferential looking study. *Developmental Science*, 11, 575-582.
- Gentner, D., & Medina, J. (1998). Similarity and the development of rules. *Cognition*, 65, 263-297.
- Kallulli, D. (2007). Rethinking the passive/anticausative distinction. *Linguistic Inquiry*, 38, 770-780.
- Narasimhan, B., Budwig, N., and Murty, L. (2005). Argument realization in Hindi caregiver-child discourse. *Journal of Pragmatics*, 37, 461-496.
- Ninio, A. (2011). *Syntactic development, its input and output*. Oxford: Oxford University Press.
- Rowland, C. (2014). *Understanding child language acquisition*. New York, NY: Routledge Press.
- Slobin, D. (1982). Universal and particular in the acquisition of language. In L. Gleitman & E. Wanner (Eds.), *Language acquisition: The state of the art* (pp. 129-170). Cambridge: Cambridge University Press.
- Smith, M. (2006). *Toddler's experimental usage of novel verbs: Relations with naturalistic talk*. Unpublished doctoral dissertation, Clark University, Worcester, MA.
- Srivastava, S. (2009). *Toddlers' use of verb constructions in Hindi*. Saarbrücken, Germany: VDM Verlag Dr. Müller.
- Tomasello, M. (2000). *The cultural origins of human cognition*. Cambridge, MA: Harvard University Press.
- Tomasello, M. (2006). Acquiring linguistic constructions. In D. Kuhn & R. Siegler (Eds.), *Handbook of child psychology*. New York: Wiley.
- Tomasello, M. (2014). Pragmatic contexts in early verb learning. In M. Tomasello & W.E. Merriman (Eds.), *Beyond names for things: Young children's acquisition of verbs*. New York: Psychology Press.
- Tomasello, M. & Brooks, P.J. (1998). Young children's earliest transitive and intransitive constructions. *Cognitive Linguistics*, 9, 379-395.
- Uziel-Karl, S., & Budwig, N. (2003). The development of non-agent subjects in Hebrew child language. In B. Beachley, A. Brown, & F. Conlin (Eds.), *Proceedings of the 27th annual Boston University Conference on Language Development* (pp. 798-808). Somerville, MA: Cascadia Press.
- Wittek, A., & Tomasello, M. (2005). German-speaking children's productivity with syntactic constructions and case morphology: Local cues act locally. *First Language*, 25(1), 103-125.